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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,702	02/23/2004	Robert Maher	P04461-D11 (11461.00.0189)	1291
23418	7590	08/15/2006	EXAMINER	
VEDDER PRICE KAUFMAN & KAMMHOLZ 222 N. LASALLE STREET CHICAGO, IL 60601			DU, THUAN N	
			ART UNIT	PAPER NUMBER
			2116	

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/784,702	MAHER ET AL.	
	Examiner	Art Unit	
	Thuan N. Du	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23,24,26,28-36,38 and 40-46 is/are rejected.
- 7) ☒ Claim(s) 25,27,37 and 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. It is hereby acknowledged that the following papers have been received and placed of record in the file: Amendment (dated 6/8/06).
2. Claims 23-46 are presented for examination.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 23, 24, 26, 28-30, 34-36, 38, 40-42 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Jones et al. [Jones] (U.S. Patent No. 4,750,112).
6. Regarding claims 23 and 35, Jones teaches a method for suspending operation of a pipelined data processor to reduce power consumption, comprising:
 - receiving an enabled first clock signal [col. 6, lines 39-61];
 - receiving one or more data processing instructions with a first portion of a pipeline subcircuit (Instruction Pipeline, IP) [Figs. 2, 5; col. 8, lines 53-58];

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executing said one or more data processing instructions with a second portion (Execution Pipeline, EP) of said pipeline subcircuit subsequent to said first pipeline subcircuit portion in response to said enabled first clock signal [Figs. 2, 5]; and

receiving an operation suspension instruction (I21 causes the suspension of the IP, therefore I21 is interpreted as operation suspension instruction) with said first pipeline subcircuit portion [col. 9, lines 25-28] and in response thereto

asserting one or more control signals from said pipeline subcircuit [col. 9, lines 27-30], and

disabling said first clock signal [Fig. 5 shows that the clock signal of the suspended IP during T24 is disabled (no clock pulse)].

7. Regarding claims 24 and 36, Jones teaches that receiving an operation suspension instruction comprises receiving a halt instruction (I21 causes the suspension of the IP, therefore I21 is interpreted as a halt instruction) [col. 9, lines 25-28].

8. Regarding claims 26, 28, 38 and 40 Jones teaches that prior to said asserting one or more control signal, completing executing one or more of said one or more data processing instructions which had been received prior to said receiving said operation suspension instruction [Fig. 5, I19 has been completed in the pipeline prior to the suspension].

9. Regarding claims 29 and 41, Jones teaches that detecting an occurrence of a combination of respective states of one or more interrupt signals and in response thereto re-enabling said first clock signal [the clock signal of the IP is re-enable, at T25, upon the completion of I21 (modify a register)].

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10. Regarding claims 30 and 42, Jones teaches that one or more further data processing instructions are advanced into the first pipeline subcircuit portion and executed with the second pipeline subcircuit portion in response to said re-enabled clock signal [Fig. 5; I22 is advanced into stage AG and executed in EP at T25].

11. Regarding claims 34 and 46, Jones teaches that generating a second clock signal having an enabled state substantially independently of said first clock [col. 5, lines 40-59].

Claim Rejections - 35 USC § 103

12. Claims 31-33 and 43-45 rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. [Jones] (U.S. Patent No. 4,750,112).

13. Regarding claims 31-33 and 43-45, Jones teaches the system including registers for indicating the states of the pipeline subcircuit portions [col. 6, lines 50-54]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the existing register for indicating whether the pipeline subcircuit portion is in a suspended state [the indication of a suspension state, inherently, indicates the disabling of the corresponding clock signal].

Allowable Subject Matter

14. Claims 25, 27, 37 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan N. Du whose telephone number is (571) 272-3673. The examiner can normally be reached on Monday-Friday: 9:30 am - 6:00 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on (571) 272-3670.

Central TC telephone number is (571) 272-2100.

The fax number for the organization is (571) 273-8300.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

TD
August 9, 2006



THUAN N. DU
PRIMARY EXAMINER